

Title (en)

Sensitive method for detecting circular telomeric molecules and its application in cancer diagnostics and treatment

Title (de)

Empfindliche Methode zur Detektion von zirkulären telomeren Molekülen und deren Anwendung zur Diagnose und Behandlung von Krebs

Title (fr)

Méthode sensible pour la détection de molécules télomériques circulaires et son application pour diagnostiquer et traiter le cancer

Publication

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Application

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Priority

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Abstract (en)

The present invention relates to a method for diagnosing rapid telomere deletion (RTD) in cancer cells, comprising the steps of a) providing a cancer sample containing DNA to be analyzed, b) removing linear DNA molecules from said sample, c) telomere-specific rolling-circle amplification of circular fragments in said sample, and d) detection of amplified telomere-specific molecules in said sample, wherein the presence and/or amount of said telomere-specific molecules is an indication for an RTD in said cancer cells. The present invention furthermore relates to other related uses of said method and kits for cancer diagnosis and therapy.

IPC 8 full level

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CPC (source: EP)

C12Q 1/6886 (2013.01); **C12Q 2600/106** (2013.01); **C12Q 2600/136** (2013.01)

Citation (search report)

- [Y] US 2005019776 A1 20050127 - CALLOW MATTHEW JAMES [US], et al
- [XD] WANG RICHARD C ET AL: "Homologous recombination generates T-loop-sized deletions at human telomeres.", CELL. 29 OCT 2004, vol. 119, no. 3, 29 October 2004 (2004-10-29), pages 355 - 368, XP002407078, ISSN: 0092-8674
- [YDA] CESARE ANTHONY J ET AL: "Telomeric DNA in ALT cells is characterized by free telomeric circles and heterogeneous t-loops", MOLECULAR AND CELLULAR BIOLOGY, vol. 24, no. 22, November 2004 (2004-11-01), pages 9948 - 9957, XP002407076, ISSN: 0270-7306
- [Y] NIE B ET AL: "Scoring single-nucleotide polymorphisms at the single-molecule level by counting individual DNA cleavage events on surfaces", ANALYTICAL CHEMISTRY 15 OCT 2005 UNITED STATES, vol. 77, no. 20, 15 October 2005 (2005-10-15), pages 6594 - 6600, XP002407079, ISSN: 0003-2700
- [Y] BLAB G A ET AL: "Homogeneous Detection of Single Rolling Circle Replication Products", ANALYTICAL CHEMISTRY 12 JAN 2004 UNITED STATES, vol. 76, no. 2, 12 January 2004 (2004-01-12), pages 495 - 498, XP002407080, ISSN: 0003-2700
- [A] TOMASKA LUBOMIR ET AL: "Alternatives to telomerase: keeping linear chromosomes via telomeric circles", FEBS LETTERS, vol. 567, no. 1, 1 June 2004 (2004-06-01), pages 142 - 146, XP002407073, ISSN: 0014-5793
- [A] NOSEK JOZEF ET AL: "Amplification of telomeric arrays via rolling-circle mechanism", JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 280, no. 11, March 2005 (2005-03-01), pages 10840 - 10845, XP002407075, ISSN: 0021-9258
- [A] DETTER J C ET AL: "Isothermal strand-displacement amplification applications for high-throughput genomics", GENOMICS, ACADEMIC PRESS, SAN DIEGO, US, vol. 80, no. 6, December 2002 (2002-12-01), pages 691 - 698, XP002310697, ISSN: 0888-7543
- [A] NILSSON M ET AL: "Analyzing genes using closing and replicating circles", TRENDS IN BIOTECHNOLOGY 2006 UNITED KINGDOM, vol. 24, no. 2, 2006, pages 83 - 88, XP002408033, ISSN: 0167-7799
- [A] TOMASKA LUBOMIR ET AL: "Exogenous double-stranded DNA circles in yeast with linear mitochondrial genomes: Potential involvement in telomere maintenance", NUCLEIC ACIDS RESEARCH, vol. 28, no. 22, 15 November 2000 (2000-11-15), pages 4479 - 4487, XP002407074, ISSN: 0305-1048

Cited by

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